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10/769,010	01/30/2004	Young C. Yoon	4740-238	7968
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COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			ELALLAM, AHMED	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/769,010	<b>Applicant(s)</b> YOON ET AL.
	<b>Examiner</b> AHMED ELALLAM	<b>Art Unit</b> 2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 April 2008.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 and 18-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 and 18-21 is/are rejected.
- 7) Claim(s) 22-24 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-146/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Objections***

1. This office action is responsive to Amendment filed on 04/28/2008. The Amendment has been entered. Claims 1-15, 18-24 are pending, from which claims 22-24 are newly added.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8-13, 15, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Malkamaki et al, US 5,577,024. Hereinafter referred to as Malkamaki

Regarding claim 1, with reference to figure 1, Malkamaki discloses a signaling method for automatic repeat request in a digital cellular telephone system, having mobile stations and base stations, see column 2, lines 61-64, comprising:

Transmitting or receiving signaling of the on-off keying (OOK) type, in which bit "1" (= acknowledgment) may correspond to a bit sequence transmission and the bit "0" is not transmitted at all. (Inherently, the on-off keying is responsive to received data either correctly or incorrectly, and that corresponds to the claimed: receiving data frames from a mobile station at a base station). The acknowledgment can be either positive or negative, see column 3, lines 36-43. Malakamaki further discloses that a positive acknowledgment (claimed ACK indication) means that a message is incorrectly

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received and requested to be re-transmitted. When a one bit sequence is used to transmit a positive acknowledgment of the OOK type (ON-OFF Keying) (claimed selective gating a physical layer radio channel), a negative acknowledgment is not transmitted at all, and correspondingly, when a bit sequence is used for a negative acknowledgment (claimed NACK) or re-transmission request, then no positive acknowledgment is sent at all. Alternatively a bit sequence can be reserved for both acknowledgments, see column 3, lines 44-51. (Claimed selectively gating a physical layer radio channel to provide ACK and NACK indications responsive to the receipt of the data frames from the mobile station; wherein the physical layer radio channel is gated on to provide one of an ACK and a NACK indication to the mobile station; and wherein the physical layer radio channel is gated off to provide the other one of the ACK and NACK indications to the mobile station).

Regarding claim 8, Malakamaki, with reference to figure 2, discloses a receiver in a base station system (claimed radio base station) for receiving and transmitting data to mobile stations, see column 2, lines 61-64, Malkamaki also discloses Transmitting or receiving signaling of the on-off keying (OOK) type, in which bit "1" (= acknowledgment) may correspond to a bit sequence transmission and the bit "0" is not transmitted at all. (Inherently, the on-off keying is responsive to received data either correctly or incorrectly, and that corresponds to the claimed: receiving data frames from a mobile station at a base station). The acknowledgment can be either positive or negative, see column 3, lines 36-43. Malakamaki further discloses that a positive acknowledgment (claimed ACK indication) means that a message is incorrectly received and requested

to be re-transmitted. When a one bit sequence is used to transmit a positive acknowledgment of the OOK type (claimed selective gating a physical layer radio channel), a negative acknowledgment is not transmitted at all, and correspondingly, when a bit sequence is used for a negative acknowledgment (claimed NACK) or re-transmission request, then no positive acknowledgment is sent at all. Alternatively a bit sequence can be reserved for both acknowledgments, see column 3, lines 44-51. (It is inherent to Malkamaki to have a control unit because that is needed to control the OOK type signaling, claimed a control unit to provide ACK and NACK indications to the mobile station, the control unit selectively gating a physical layer radio channel to provide ACK and NACK indications responsive to the receipt of the data frames from the mobile station; wherein the control unit gates the physical layer radio channel on to provide one of an ACK and a NACK indication to the mobile station; and wherein the control unit gates the physical layer radio channel off to provide the other one of the ACK and NACK indications to the mobile station).

Regarding claim 15, with reference to figure 1, Malakamaki discloses a signaling method for automatic repeat request in a digital cellular telephone system, having mobile stations and base stations, see column 2, lines 61-64, comprising: Transmitting or receiving signaling of the on-off keying (OOK) type, in which bit "1" (= acknowledgment) may correspond to a bit sequence transmission and the bit "0" is not transmitted at all. (Inherently, the on-off keying is responsive to received data either correctly or incorrectly, and that corresponds to the claimed: receiving data frames from a mobile station at a base station). The acknowledgment can be either positive or

negative, see column 3, lines 36-43. Malakamaki further discloses that a positive acknowledgment (claimed ACK indication) means that a message is incorrectly received and requested to be re-transmitted. When a one bit sequence is used to transmit a positive acknowledgment of the OOK type (claimed selective gating a physical layer radio channel), a negative acknowledgment is not transmitted at all, and correspondingly, when a bit sequence is used for a negative acknowledgment (claimed NACK) or re-transmission request, then no positive acknowledgment is sent at all. Alternatively a bit sequence can be reserved for both acknowledgments, see column 3, lines 44-51. (Claimed receiving data packets from a mobile station at a base station; selectively gating a physical layer radio channel to acknowledge data packets received from the mobile station). Malkamaki further discloses that a bit sequence can be reserved for both acknowledgments, see column 3, lines 44-51. (Claimed physical layer radio channel is gated on to provide an ACK indication, and is gated off to provide a NACK indication and the physical layer radio channel is gated on to provide a negative acknowledgement and is gated off to provide a positive acknowledgment).

Regarding claims 2, 3, 9, 10, Malakamaki discloses that the acknowledgment can be either positive or negative, see column 3, lines 36-43. Malakamaki also discloses that a positive acknowledgment (claimed ACK indication) means that a message is incorrectly received and requested to be re-transmitted. Malakamaki further discloses that when a one bit sequence is used to transmit a positive acknowledgment of the OOK type (claimed selective gating a physical layer radio channel), a negative acknowledgment is not transmitted at all, and correspondingly, when a bit sequence is

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used for a negative acknowledgment (claimed NACK) or re-transmission request, then no positive acknowledgment is sent at all. Alternatively a bit sequence can be reserved for both acknowledgments, see column 3, lines 44-51. (Claimed physical layer radio channel is gated on to provide an ACK indication, and is gated off to provide a NACK indication, as in claims 2, and 9. (claimed the physical layer radio channel is gated on to provide a negative acknowledgement and is gated off to provide a positive acknowledgement, as in claims 3, and 10).

Regarding claims 4, 11 and 18, Malakamaki discloses the ACK and NAK bits are transmitted using sub-channels of a TDMA frame. See column 2, lines 54-67-column 3, line 6. (Claimed the physical layer radio channel is a time multiplexed channel and contains a logical ACK subchannel with multiple time slots, as in claims 4, 11, and 18; and claimed the mobile station is assigned to selected time slots on the ACK subchannel and wherein the physical layer channel is gated on and off during the selected time slots to provide the ACK and NACK indications to the mobile station as in claims 5, 12 and 19).

Regarding claims 6, 13 and 20, Malakamaki discloses that when a bit sequence is used for a negative acknowledgment (claimed NACK) or re-transmission request, then no positive acknowledgment is sent at all. See column 3, lines 44-51. (the no positive acknowledgment transmission reads on the claimed gating off the physical layer channel in the selected time slots on the ACK subchannel while the mobile station is idle, ( because in case the mobile station is idle no acks are necessary).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7, 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malakamaki in view of Moulsey et al et al, US 7,124,343. Hereinafter referred to as Moulsey.

Regarding claims 7, 14 and 21, Malakamaki does not specify repeating each ACK and NACK indication a predetermined number of times.

However, Moulsey in the same field of automatic repeat request techniques discloses repeating NAK and ACK for data retransmission. See column 5, lines 47-59 and column 6, lines 16-17. It would have been obvious to a person of skill in the art at the time the invention was made to provide the method/system of Malakamaki by the ACK/NAK repetition as taught by Moulsey so to improve the system reliability.

***Response to Arguments***

4. Applicant's arguments filed on 04/28/2008 have been fully considered but they are not persuasive.

Applicants alleged that Malkamaki fails to anticipate the claimed invention of claims 1, 8 and 15.

Applicants argue on page 9 of the REMARKS that:

*"Malkamaki discusses on-off keying only at col. 3, lines 36-56, and nowhere in that section does Malkamaki state that the contemplated on-off keying is accomplished by gating a physical layer radio channel as claimed by Applicant. Indeed, there is much in Malkamaki to suggest otherwise". Emphasis added.*

Applicants also argue on page 10 that:

*"Malkamaki does not use the term "physical layer" or the word "physical" even once anywhere in its specification and drawings. Malkamaki does use the term "radio channel," but only in its most generic sense. For example, in the claims--see, e.g., claims 1 and 2--and in the specification, Malkamaki uses the term "radio channel" generically and broadly to refer to both uplink (mobile to base station) and downlink (base station to mobile) transmissions and makes no distinction between logical layer and physical layer radio channels. Thus, the disclosure of Malkamaki cannot be argued as teaching physical layer radio channel gating, nor can such teaching be argued as inherent in Malkamaki". Emphasis added.*

And on the same page:

*"Nowhere is it suggested that any physical layer radio channel supporting TDMA transmissions is turned off, and the Patent Office appears to be impermissibly going beyond what is explicitly and implicitly taught by Malkamaki in making such an assertion". Emphasis added.*

Applicants with reference to Malkamaki (Col 3, lines 44-51) have stated:

*"According to those teachings Malkamaki must transmit a first bit sequence to indicate ACK and transmit a second, distinct bit sequence to indicate a NACK. By definition, these actions involve actively transmitting something, irrespective of whether an ACK is sent, or a NACK is sent. More critically, such actions cannot be understood*

*as gating a physical layer radio channel on for an ACK or NACK, and off for the other one of the ACK or NACK". Emphasis added.*

In response to the above arguments, Examiner asserts that Malakamaki anticipate the invention as claimed in claim 1.

The passage relied upon in asserting that Malkamaki is not anticipating the claimed invention as in claim 1 is as follow:

A positive acknowledgment means that a message is incorrectly received and requested to be re-transmitted. When a one bit sequence is used to transmit a positive acknowledgment of the OOK type, **a negative acknowledgment is not transmitted at all**, and correspondingly, when a bit sequence is used for a negative acknowledgment or re-transmission request, then **no positive acknowledgment is sent at all**.

From the above description of Malakamaki and in accordance with the specification that uses the OOK (ON-OFF KEYING) for the alleged gating off and on for providing the ACK/NACK, it is clear that the OOK of Applicants is the same of that of Malakamaki.

As to the argument that Malakamaki "*does not use the term "physical layer" or the word "physical" even once anywhere in its specification and drawings" and therefore it does not provide for the gating of a physical channel.*" Examiner notes that contrary to Applicants assertion, the fact that **a negative acknowledgment is not transmitted at all or no positive acknowledgment is sent at all** reads on the gating off or on of physical radio channel, since noting is transmitted at all. Stated differently and in light of

the specification, the non transmission of the **negative acknowledgment or positive acknowledgment** does not require the use of the physical radio channel for the "1" or "0" bit transmission as understood from the specification, therefore the physical radio channel of Malakamaki (as suggested by the OIS layers) is gated on and off to provide the ACK/NAC.

**As to claim 8:**

Claim 8 has the same scope of claim 1, and thus subject to the same argument as in claim 1. Applicants further argue that:

*"it is improper for the OA to state that the "control unit" of claim 8 is found inherently in Malkamaki. Malkamaki indeed may inherently have some form of control unit. However, the control unit at issue is the one explicitly claimed in claim 8, including the limitations of a control unit that gates a physical layer radio channel to send ACK/NACK indications. Malkamaki does not teach gating a physical layer radio channel within the meaning of Applicant's claims, and it is improper to argue that a control unit performing the claimed functions is inherent within Malkamaki".*

As noted by Applicants that "*Malkamaki indeed may inherently have some form of control unit*". In addition as argued above the limitation of claim 8 are identical to those of claim 1, and thus are subject to the same argument, and thus contrary to Applicants' argument are indeed anticipated by Malkamaki.

**Independent claims 7, 14 and 21:**

In essence, Applicants argue that these claims depend from allowable base claims. Examiner respectfully disagrees. Further Applicants argue that Mousley does not provide gating physical radio channel. In response, Mousley does not need to teach

such gating, since Malkamaki already have such feature as argued above with reference to base claims 1 and 8.

Examiner believes that the rejection above is maintained as proper.

***Allowable Subject Matter***

5. Claims 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571)272-3097. The examiner can normally be reached on 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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